

# Notice of Allowability

Application No.

10/800,168

Examiner

Eugenia Wang

Applicant(s)

ENJOJI ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment received on September 6, 2007.
2. ☒ The allowed claim(s) is/are 1,4,5,8,9,12,13 and 16.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 6, 2007 has been entered.

### ***Response to Amendment***

2. In response to the amendment received September 6, 2007:
- a. Claims 2, 3, 6, 7, 10, 11, 14, and 15 have been cancelled as per Applicant's request. Claims 1, 4, 5, 8, 9, 12, 13, and 16 are pending.
  - b. The previous 112 rejections are withdrawn in light of the amendment.
  - c. The previous prior art rejection is withdrawn in light of the amendment.
- Reasons for allowance follow.

### ***Allowable Subject Matter***

3. Claims 1, 4, 5, 8, 9, 12, 13, and 16 are allowed.

The following is an Examiner's statement of reasons for allowance: none of the prior art of record, alone or in combination, appear to teach, suggest, or render obvious the invention least claim 1, 5, 9, and 13.

Claims 1 and 5 teach a fuel cell system comprising the elements therein. Notably, both claims 1 and 5 now recite that the system has a humidifier for humidifying

said oxygen-containing gas supplied to said cathode of the fuel cell, an oxygen-containing gas flow rate controller for controlling a flow rate of said oxygen-containing gas supplied to said cathode such that humidity of said hydrogen-containing gas is maintained within a predetermined range less than 100%, a humidity sensor for detecting humidity of said hydrogen-containing gas, a circulation passage for circulating said hydrogen-containing gas to supply said hydrogen-containing gas to said anode, wherein the humidity sensor is disposed in said circulation passage, and said fuel cell system is free of a humidifier for humidifying said hydrogen-containing gas supplied on an anode side of said fuel cell. Claims 9 and 13 methods of operating fuel cell systems analogous to using the elements recited in claims 1 and 5, namely: humidifying said oxygen-containing gas supplied to said cathode of the fuel cell, controlling a flow rate of said oxygen-containing gas supplied to said cathode such that humidity of said hydrogen-containing gas is maintained within a predetermined range less than 100%, detecting the humidity of said hydrogen-containing gas, providing a circulation passage to circulate said hydrogen-containing gas to supply said hydrogen-containing gas to said anode, wherein the humidity sensor is disposed in said circulation passage, and said fuel cell system is free of a humidifier for humidifying said hydrogen-containing gas supplied on an anode side of said fuel cell

None of the art of record alone or combined teach, suggest, or render obvious the use of a humidity sensor on the hydrogen-containing gas side (anode), wherein the humidifier is provided on the oxygen-containing gas side (cathode), and coupling the reading of the humidity sensor with the flow rate of oxygen-containing gas in order to

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control the humidity of the hydrogen-containing gas. Notably, Katagiri et al.'s (US 2001/0010875) humidity sensor is located on the same side as the humidifier (on the cathode side). Furthermore, neither Katagiri et al. nor any of the other prior art of record mention cross-sensing humidity from the anode side. Therefore, there is no motivation for providing humidification on the cathode side in order to humidify the anode side by coupling the flow-rate of the oxygen-containing gas to a humidity sensor on the anode side. Therefore the invention of claims 1, 5, 9, and 13 are considered patentable over the prior art. Since claims 4, 8, 12, and 16 are dependent on claims 1, 5, 9, or 13, they are patentable for the same reason.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugenia Wang whose telephone number is 571-272-4942. The examiner can normally be reached on 7 - 4:30 Mon. - Thurs., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EW



GREGG CANELMO  
PRIMARY EXAMINER

10/4/07